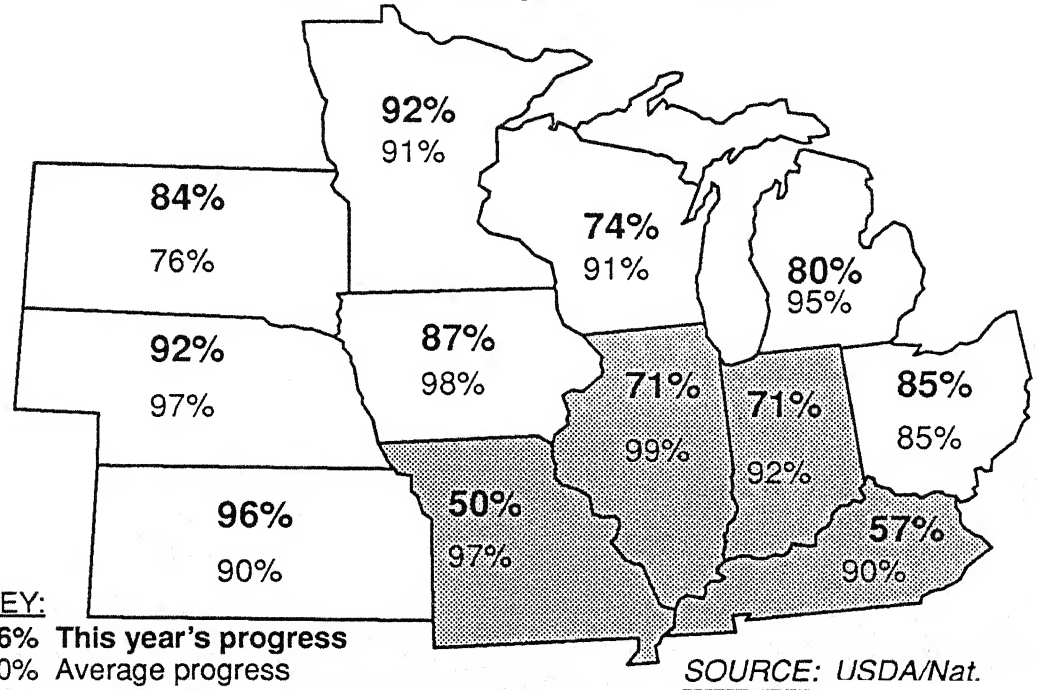
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 90/21 Washington, DC May 26, 1990

CORN PLANTING PROGRESS

As Of May 27, 1990



KEY:
96% This year's progress
90% Average progress
Shaded states 20% or more behind average

SOURCE: USDA/Nat. Ag. Statist.

IN SHARP CONTRAST TO THE SEVERE SPRIN
THE NATION'S MIDSECTION, AMPLE 1990 PF
TOPSOIL AND SUBSOIL MOISTURE BUT PRODU
SOUTH–CENTRAL GREAT PLAINS, THE LOWEF
OF THE CORN BELT. AS A RESULT, THIS YEA
ARE LAGGING WELL BEHIND AVERAGE, ESF
AND WESTERN OHIO VALLEYS. FOR MORE IN

UNITED STATES DEPARTM
NATIONAL OCEANIC AND ATMOSI
NATIONAL WEATHER SERVICE–NATION
CLIMATE ANALY

WEEKLY CLIMATE BULLETIN

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- *Highlights of major climatic events and anomalies.*
- *U.S. climatic conditions for the previous week.*
- *U.S. apparent temperatures (summer) or wind chill (winter).*
- *U.S. cooling degree days (summer) or heating degree days (winter).*
- *Global two–week temperature anomalies.*
- *Global four–week precipitation anomalies.*
- *Global monthly temperature and precipitation anomalies.*
- *Global three–month precipitation anomalies (once a month).*
- *Global twelve–month precipitation anomalies (every three months).*
- *Global three–month temperature anomalies for winter and summer seasons.*
- *Special climate summaries, explanations, etc. (as appropriate).*

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Climate Analysis Center via the Global Telecommunications System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF MAY 26, 1990

1. *Central United States:*

HEAVY THUNDERSTORMS DRENCH SCATTERED LOCATIONS.

Once again, moderate rain fell across a large portion of the central U.S. while heavy thunderstorms inundated scattered locations. Between 200 mm and 240 mm deluged isolated parts of southeastern Kansas and southwestern Arkansas while 110 mm to 150 mm was recorded at a few locations in Iowa and central Missouri. Most of the region received 50 mm to 100 mm as only the northern Great Plains, upper Midwest, northern Missouri, southern Oklahoma, Texas, and the lower Mississippi Valley were spared during the week [19 weeks].

2. *Southern Florida and the Western Caribbean Islands:*

SEASON'S FIRST TROPICAL DEPRESSION INUNDATES REGION.

A weak tropical depression, the first of the season in the Atlantic Ocean, formed around midweek southwest of Cuba and dissipated as it drifted northeastward into the Straits of Florida; however, heavy convection north and east of the storm's center dropped large amounts of rain (up to 381 mm) on western Cuba, and lesser but significant amounts on extreme southeastern Florida and the western Bahamas. Daily totals across Cuba ranged up to 207 mm, and the 100 mm to 150 mm that soaked southern Florida provided some relief from the long–term dryness. Unfortunately, southwestern Florida, which has been acutely dry since the beginning of the year, recorded much less rainfall [Episodic Event].

3. *Northern half of Europe:*

WARM WEATHER DIMINISHES, BUT DRYNESS PERSISTS.

Near normal temperatures returned to most of the continent except across central and southwestern areas where weekly departures of +3°C to +5°C were observed [Ended after 7 weeks]. Dry weather, however, continued across the northern half of the continent. Most of the northern third of the area received little or no rainfall while central and southern portions recorded precipitation totals between 30 mm and 100 mm. Despite the recent rains, most of the northern half of Europe has received less than half the normal rainfall during the past four weeks, and several locations in northern France and across Benelux and the Germanies have recorded less than 25% of normal [4 weeks].

4. *The Sahel:*

EXCEPTIONAL WARMTH CONTINUES.

Once again, weekly departures around +2°C affected the area while some locations in Senegal recorded temperatures up to 46°C [7 weeks].

5. *West–Central Africa:*

LATE–SEASON RAINS INUNDATE THE CONGO.

Although rainfall totals should be diminishing as the region's dry season normally begins, several stations in the Congo measured up to 240 mm during the past week. These amounts are nearly double the normal May precipitation and almost one–fifth of the region's normal annual total [Episodic Event].

6. *East–Central India:*

COOL WEATHER CONTINUES.

Weekly departures of –3°C to –6°C again plagued most of east–central India as the recent cool spell continued [4 weeks].

7. *Much of Southeastern Asia:*

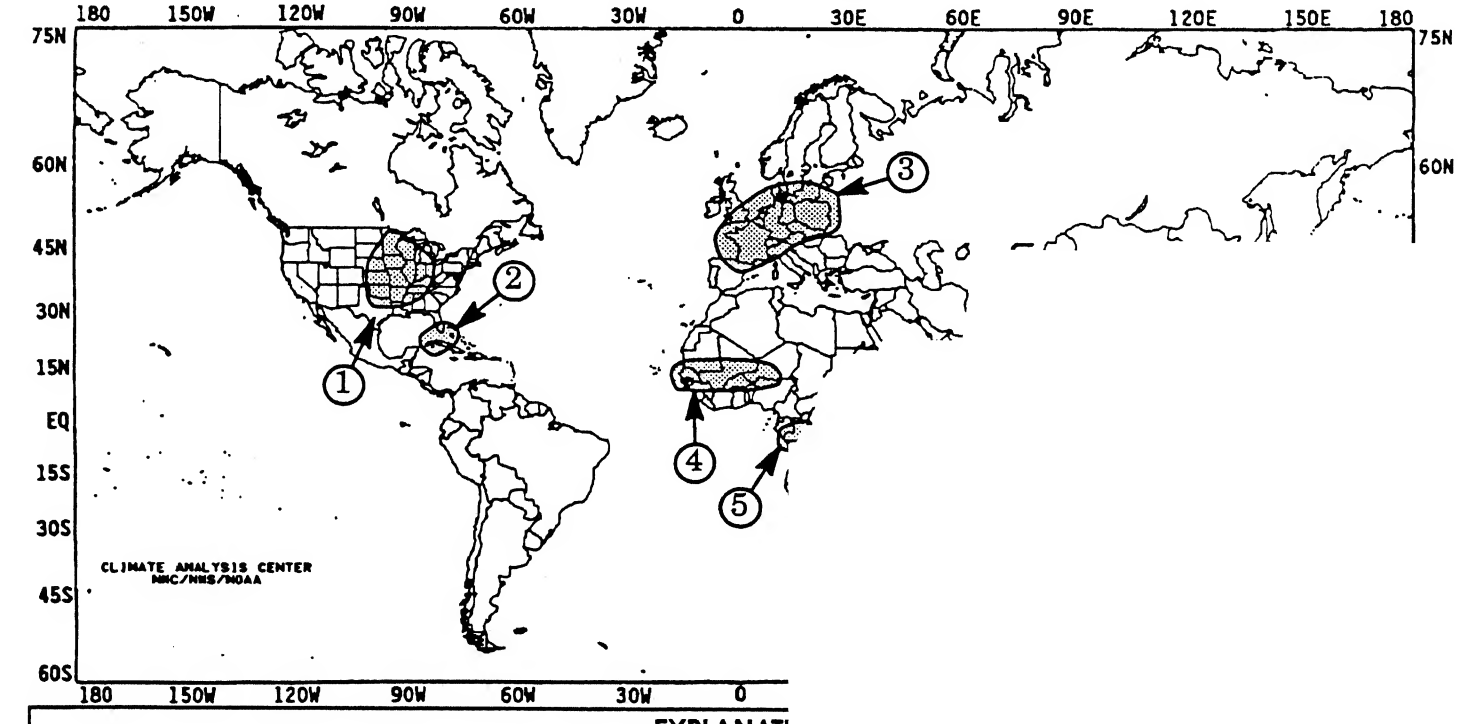
DELUGING RAINFALL SOAKS MANY AREAS.

A tropical depression moved into the Republic of Myanmar and moved slowly eastward across Thailand, dumping up to 245 mm across the nation. Copious rainfall also drenched most of the northern two–thirds of the Philippines and the island of Hainan, where 150 mm to 335 mm were observed. Daily totals on Hainan approached 205 mm while moderate rains (50 mm to 150 mm) moistened southeastern mainland China and Taiwan [9 weeks].

8. *Eastern Australia:*

HEAVY RAINS REDEVELOP.

After several weeks of dry weather that engendered recovery from late March—early April torrential rains, intense precipitation fell throughout the eastern third of the continent again. Inland locations recorded 50 mm to 170 mm while stations along the northeastern coast of Queensland measured as much as 265 mm [Episodic Event].



EXPLANATI

TEXT:Approximate duration of anomalies is in brackets. Precipitation

MAP:Approximate locations of major anomalies and episodic events week temperature anomalies, four week precipitation anomalies, lon

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF MAY 20 THROUGH MAY 26, 1990

Widespread moderate to heavy rainfall and numerous utbreaks of severe weather continued across much of the astern half of the country while a late–season Pacific orm system brought welcome precipitation to the orthern two–thirds of the West Coast. Snow blanketed ne higher elevations of the Cascades and Sierra Nevadas s unseasonably cold air chilled the Northwest. Farther ast, severe thunderstorms battered the central Gulf Coast tates with damaging winds, hail, and torrential ownpours early in the week. On Thursday, intense fternoon and evening thunderstorms spawned at least 18 ornadoes in the northern and central Plains (9 in Kansas, in Wyoming, 2 in Montana, and 1 in South Dakota). looding continued along many rivers in the southern and entral Great Plains, the lower and middle Mississippi alleys, the Ohio Valley, and at scattered locations in the entral Appalachians, mid–Atlantic, and Southeast hanks to generous precipitation this year (Figure 5).

In addition, this Spring's heavy precipitation, articularly since late April (Figure 4), has delayed corn nd soybean plantings across the Midwest as fields are ither saturated or flooded (Figures 2 and 3 depicts corn nd soybean belts). As expected, the excessive recipitation has produced abnormally wet short–term topsoil] (Figures 6 and 9) and long–term [subsoil] (Figures and 8) conditions. As of May 27, the USDA/NASS eported that corn plantings in Missouri, Illinois, Indiana, nd Kentucky were more than 20% behind average (front over). Soybean plantings lagged even further behind in everal midwestern states (Figure 1); however, soybeans re generally planted later in the year than corn.

The first Atlantic tropical depression of 1990 formed hursday about 275 miles south of Havana, moved orthward across west–central Cuba, and dissipated over ne Florida Straits Saturday morning. Up to 15 inches of ain drenched parts of Cuba, but only 2–6 inches of rain fell n extreme southern Florida, providing substantial relief rom short–term dryness but little help with the area's ong–term drought.

Early in the week, a storm system in the Midwest, an pper–air disturbance in the south–central Great Plains, nd a strong Pacific cold front in the Far West produced wet veather across much of the country. The weather became evere over the central Gulf Coast states and in parts of the orth–central High Plains. While readings soared into the ineties and one hundreds in the southern Great Plains nd the lower Mississippi Valley, much of the Northeast xperienced record or near–record cold. In Indiana, the Vhite River was at its highest level since May 1961 at etersburg, March 1964 at Hazleton, and February 1969 t Edwardsport. The Mississippi River was flooding from airo, IL southward to Caruthersville, MO.

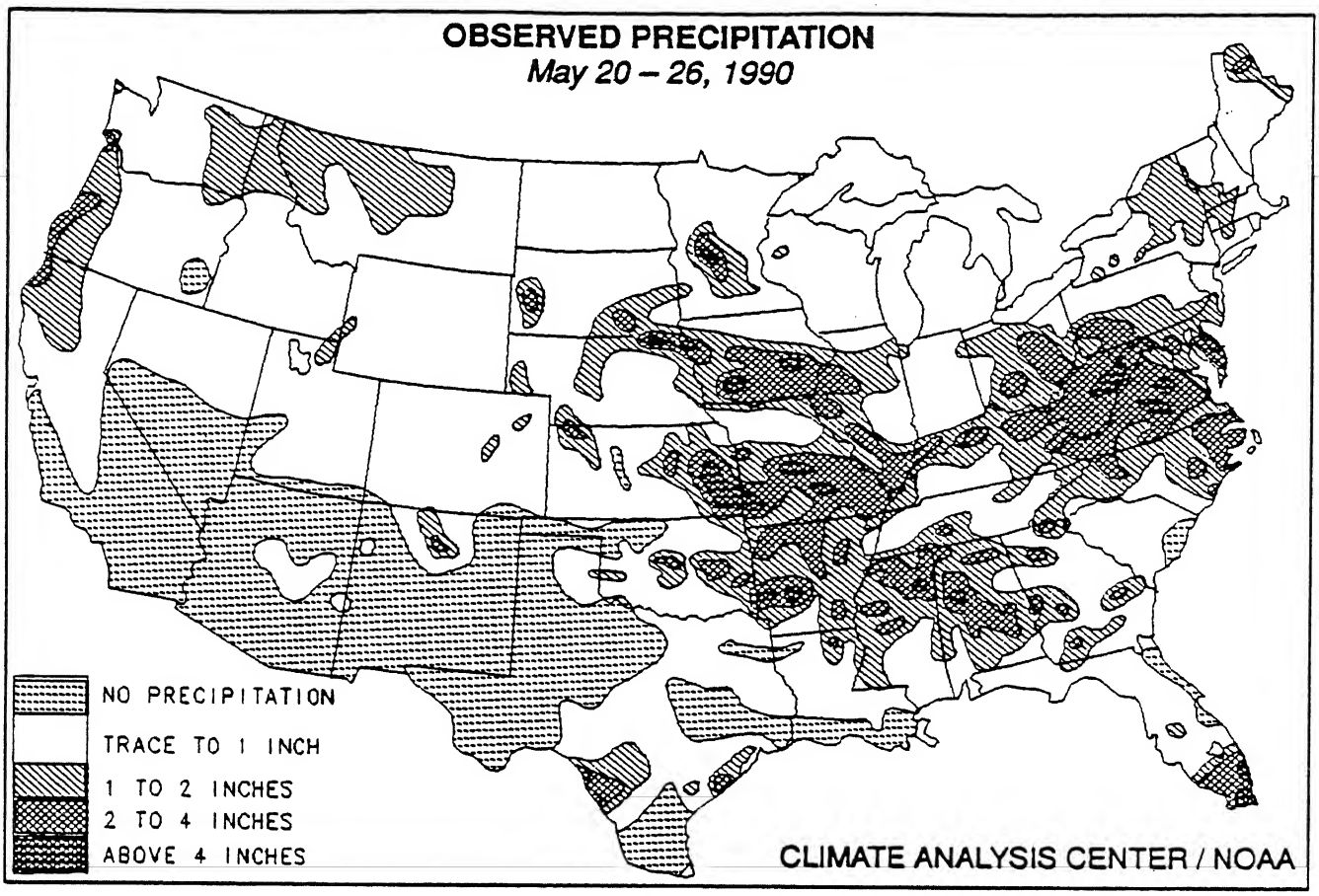
By mid–week, the storm system in the Midwest had acked off the Atlantic Coast as high pressure moved into ne central and eastern U.S. In the West, the Pacific cold ront slowed its eastward progress as a wave of low ressure formed along the front and rapidly intensified ver the north–central Rockies. The collision of warm tropical air with much colder Canadian air produced numerous outbreaks of severe weather across the northern and central Plains.

Towards the week's end, the storm system in the Rockies slowly trekked eastward into the Midwest, producing locally heavy and severe thunderstorms from the central Great Plains eastward into the lower Ohio and the Tennessee Valleys. The cold front associated with the storm system eventually became stationary across the south–central Great Plains, the middle Mississippi and lower Ohio Valleys, and the mid–Atlantic. Waves of low pressure formed along the front, triggering showers and thunderstorms throughout much of the aforementioned regions on Saturday. Farther south, the remnants of a weak tropical depression buffeted southern Florida with gusty winds and occasionally heavy rains (up to 5.9 inches). In the Far West, another strong Pacific cold front approached the coast, spreading precipitation from central California northward to Canada.

According to the River Forecast Centers, the greatest totals (more than 4 inches) were reported in eastern Kansas, central Missouri, southeastern Florida, eastern West Virginia and western Virginia, and the middle Rio Grande Valley. Moderate to heavy amounts were common along the central Pacific Coast, in the central Great Plains, the middle Mississippi and eastern Ohio Valleys, mid–Atlantic, and in portions of the Southeast (Table 1). Light to moderate totals occurred across the northern three–quarters of the Far West, the northern third of the Rockies, and throughout much of the eastern half of the nation. Little or no precipitation fell on the Southwest, the southern two–thirds of the the Rockies, the southern half of the High Plains, and along the west–central Gulf and southern Atlantic Coasts. Precipitation was generally light throughout Alaska while parts of Hawaii experienced moderate to heavy rain showers.

Temperatures averaged above normal for the second straight week in the southern Plains and Southwest while warmer weather replaced the previous week's chilly conditions in the northern Plains. The greatest departures in the lower 48 states (more than +6°F) were found in southern Texas, eastern New Mexico, and southern Arizona (Table 2) as highs surpassed 100°F at several locations in these areas. Warm weather also prevailed across the southern tier of states as readings in the nineties were common. Once again, most of Alaska reported above normal weekly temperatures, with the largest departures along the northern portions of the state. Hawaii observed seasonable temperatures.

In contrast, subnormal temperatures occurred throughout much of the eastern and western thirds of the country. Temperatures averaged more than 7°F below normal in the Northeast, the central Corn Belt, and northern California (Table 3). Although readings remained above freezing in most of New England, lows averaged around 40°F while highs reached only the mid—fifties to near 60°F.


OBSERVED PRECIPITATION
May 20 – 26, 1990
NO PRECIPITATION
TRACE TO 1 INCH
1 TO 2 INCHES
2 TO 4 INCHES
ABOVE 4 INCHES
CLIMATE ANALYSIS CENTER / NOAA

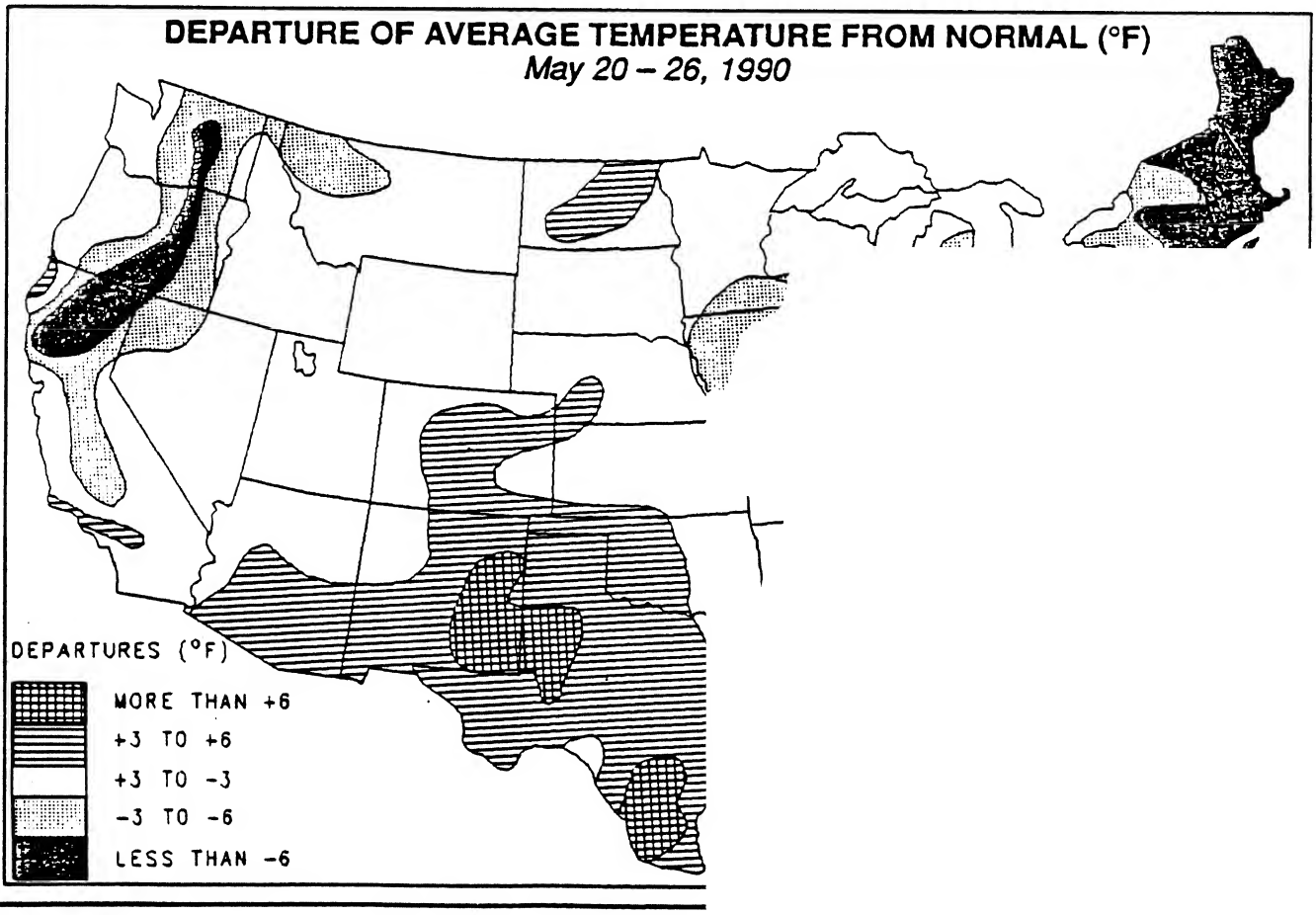

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
May 20 – 26, 1990
DEPARTURES (°F)
MORE THAN +6
+3 TO +6
+3 TO -3
-3 TO -6
LESS THAN -6

TABLE 1. Selected stations with 2.50 or more inches of precipitation for the week.

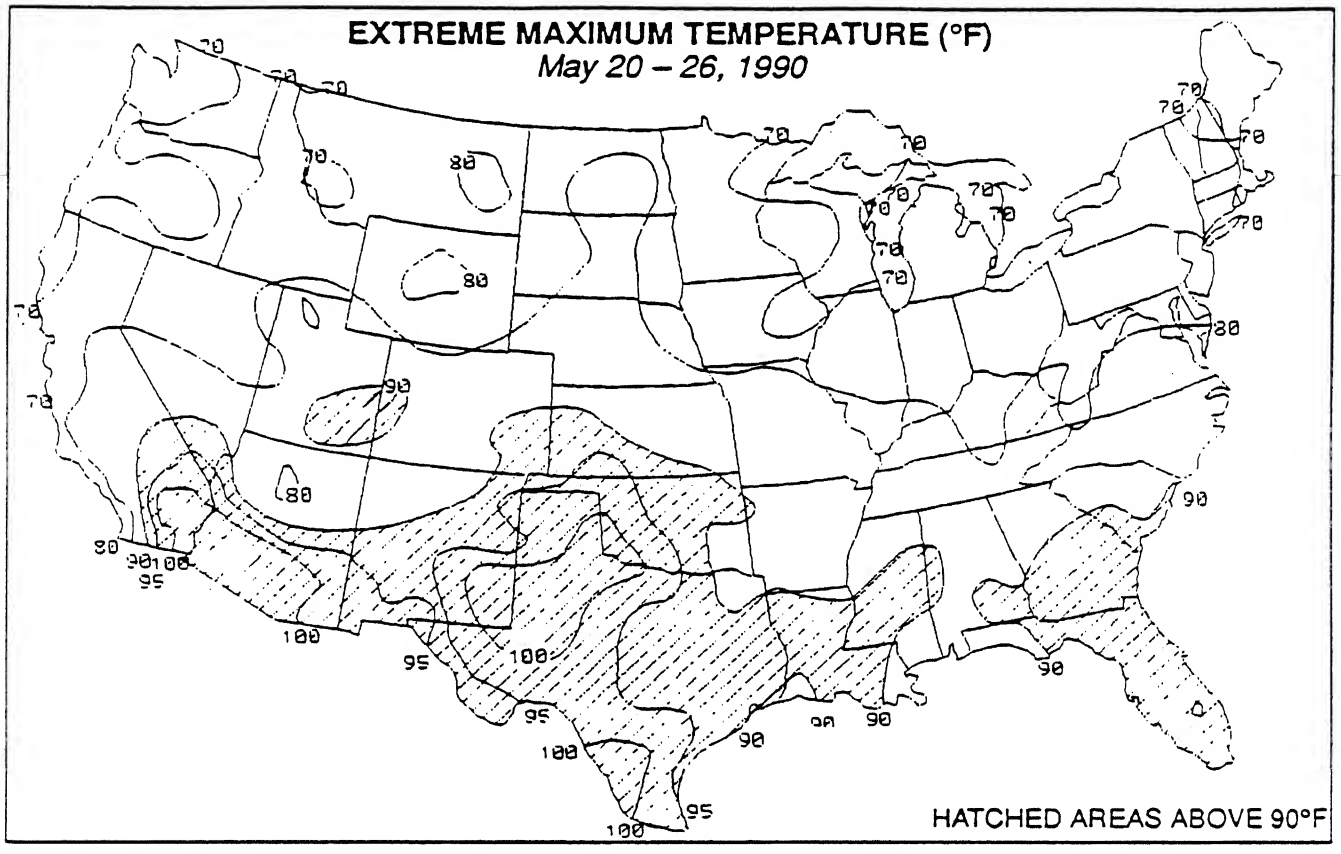
STATION	TOTAL (INCHES)	STATION	TOTAL (INCHES)
HOMESTEAD AFB, FL	4.50	WILMINGTON, NC	3.06
TUSCALOOSA, AL	4.16	HARRISON, AR	3.06
JOPLIN, MO	3.99	STOCKTON, CA	2.99
ALEXANDRIA, MN	3.97	NEW BERN, NC	2.97
REDDING, CA	3.84	CENTERVILLE, GA	2.86
ROANOKE, VA	3.60	PARKERSBURG/WOOD CO., WV	2.85
HILO/LYMAN, HAWAII, HI	3.54	EVANSVILLE, IN	2.56
RICHMOND/BYRD, VA	3.33	LITTLE ROCK AFB, AR	2.54
CAPE GIRARDEAU, MO	3.07	PADUCAH, KY	2.52
SIOUX CITY, IA	3.06		

TABLE 2. Selected stations with temperatures averaging 5.0°F or more ABOVE normal for the week.

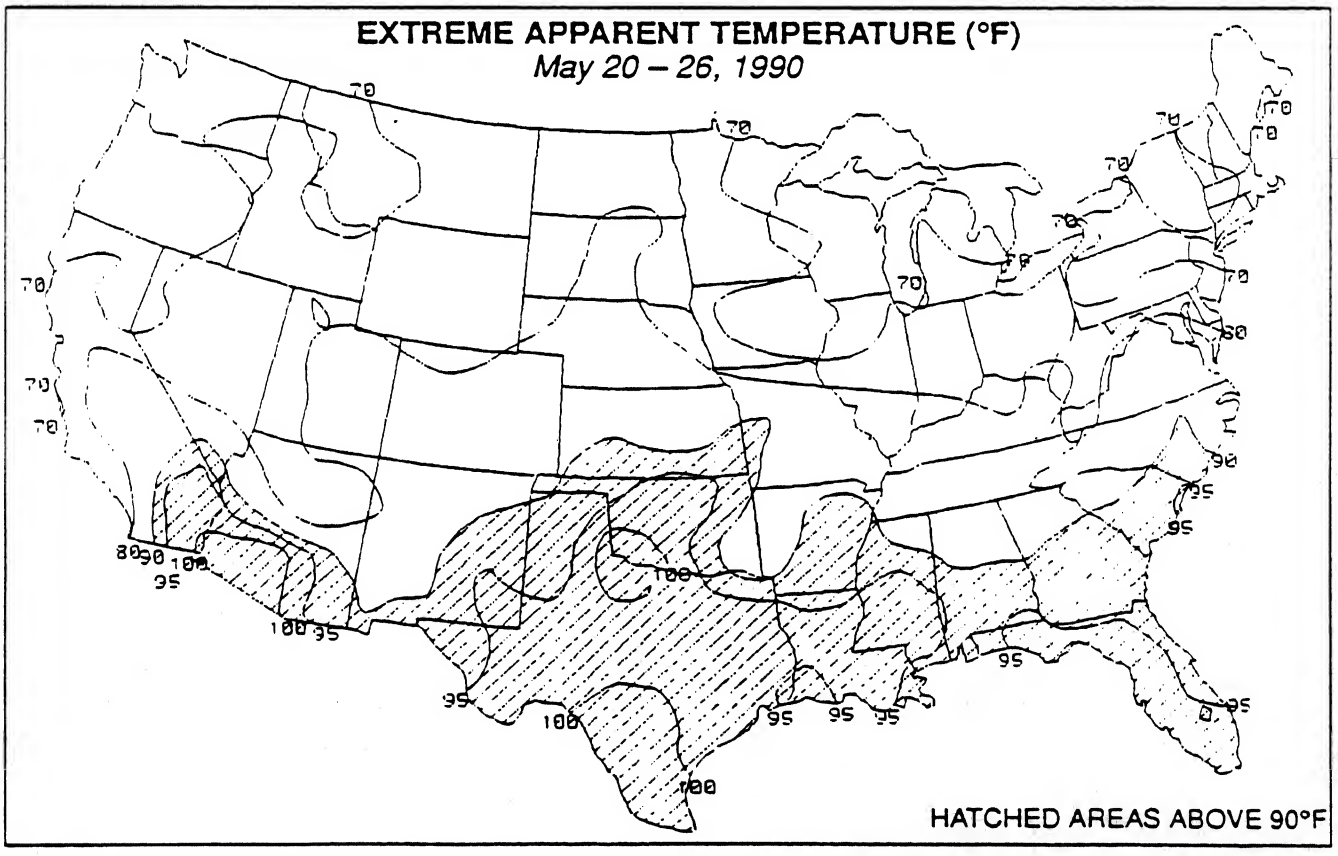
STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
BARROW, AK	+9.2	32.6	PHOENIX, AZ	+5.5	84.8
ROSWELL, NM	+7.6	78.9	AUSTIN, TX	+5.4	81.9
MIDLAND, TX	+7.1	81.4	GAGE, OK	+5.3	74.1
CARLSBAD, NM	+7.0	81.2	DENVER, CO	+5.3	64.8
LUBBOCK, TX	+6.9	77.8	TUCSON/DAVIS-MONTHAN AFB, AZ	+5.2	79.8
TUCUMCARI, NM	+6.9	75.5	COLLEGE STATION, TX	+5.1	81.3
BARTER ISLAND, AK	+5.8	31.5	WINK, TX	+5.0	80.7
SAN ANTONIO, TX	+5.7	82.6	FT. SILL/HENRY POST AAF, OK	+5.0	76.9
KINGSVILLE NAS, TX	+5.6	84.9	HOBART, OK	+5.0	76.3
KOTZEBUE, AK	+5.6	41.2			

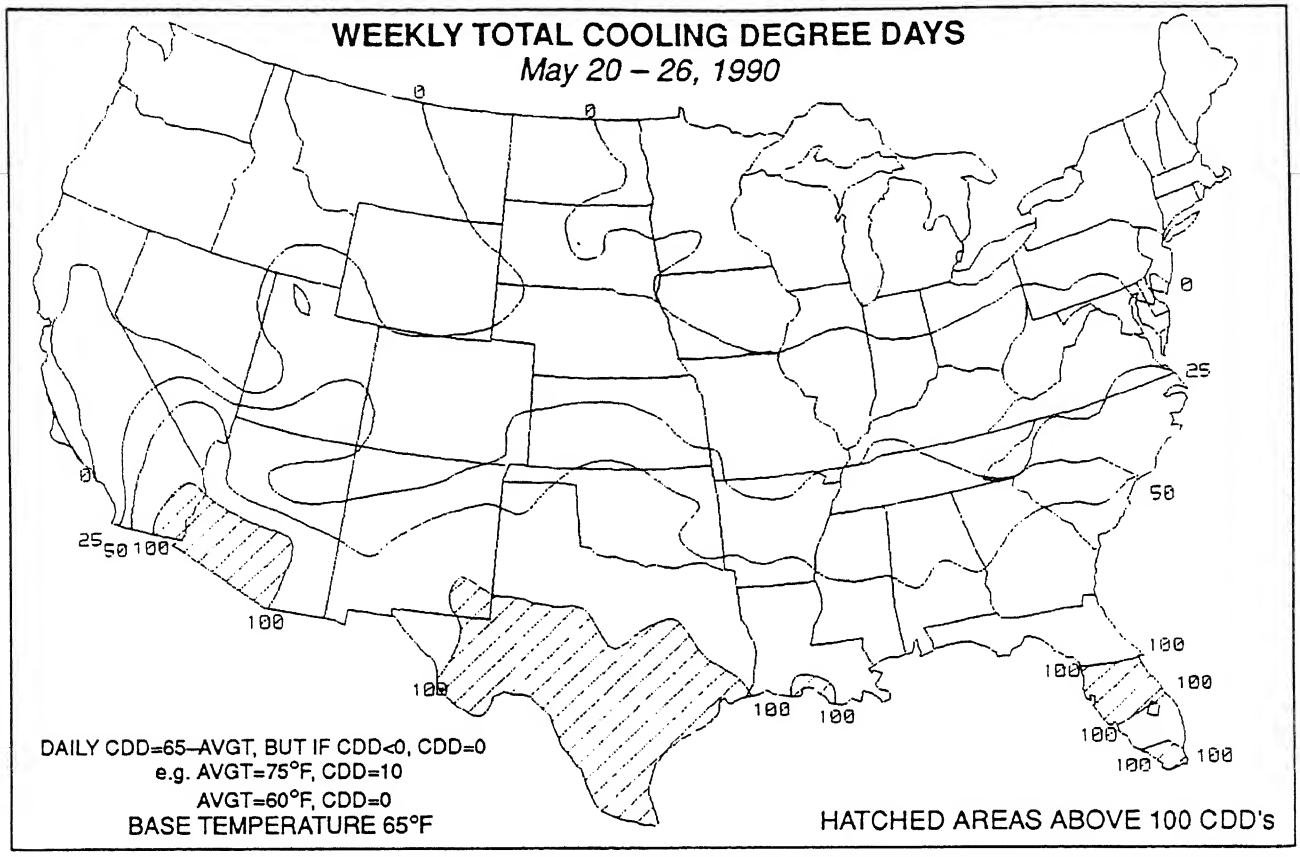
TABLE 3. Selected stations with temperatures averaging 7.0°F or more BELOW normal for the week.

STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
BOSTON/LOGAN, MA	-11.2	49.6	HARTFORD, CT	-7.8	53.9
WORCESTER, MA	-11.1	47.0	MOLINE, IL	-7.7	56.0
REDDING, CA	-10.7	60.0	CARIBOU, ME	-7.6	45.4
HOULTON, ME	-10.6	42.8	BURLINGTON, VT	-7.6	50.4
BLUE CANYON, CA	-9.4	43.9	CEDAR RAPIDS, IA	-7.6	56.2
RED BLUFF, CA	-8.8	60.8	DOVER AFB, DE	-7.6	58.5
PROVIDENCE, RI	-8.6	51.3	AUGUSTA, ME	-7.5	49.7
SEXTON SUMMIT, OR	-8.4	42.3	WENATCHEE, WA	-7.4	54.7
CONCORD, NH	-8.4	49.3	OTTUMWA, IA	-7.3	57.5
WRIGHTSTOWN/MCGUIRE AFB, NJ	-8.2	56.8	EASTPORT, ME	-7.2	44.1
MT. WASHINGTON, NH	-8.0	29.2	MONTPELIER, VT	-7.2	48.4
BANGOR, ME	-8.0	47.5	UTICA, NY	-7.0	51.2
POUGHKEEPSIE, NY	-7.9	52.6	WILKES-BARRE, PA	-7.0	53.8

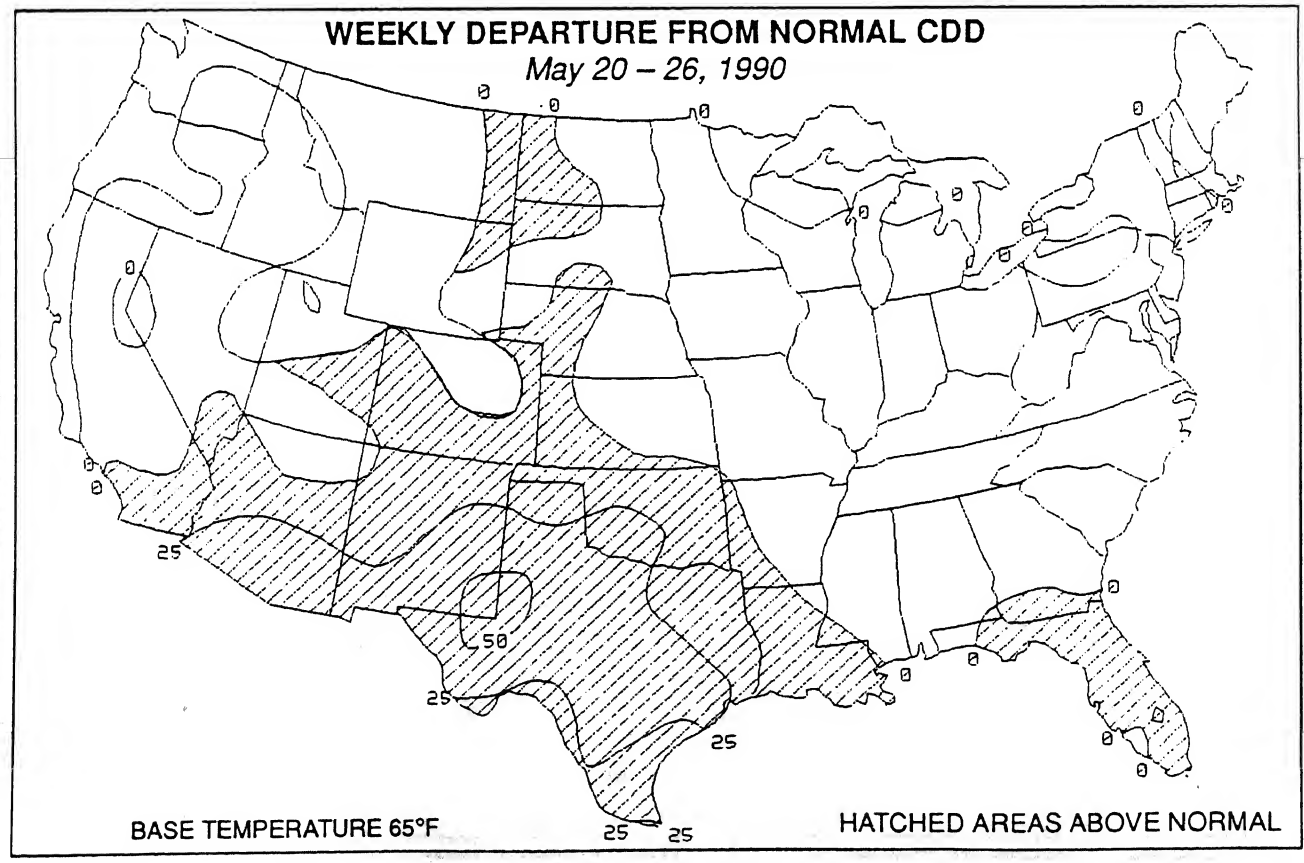


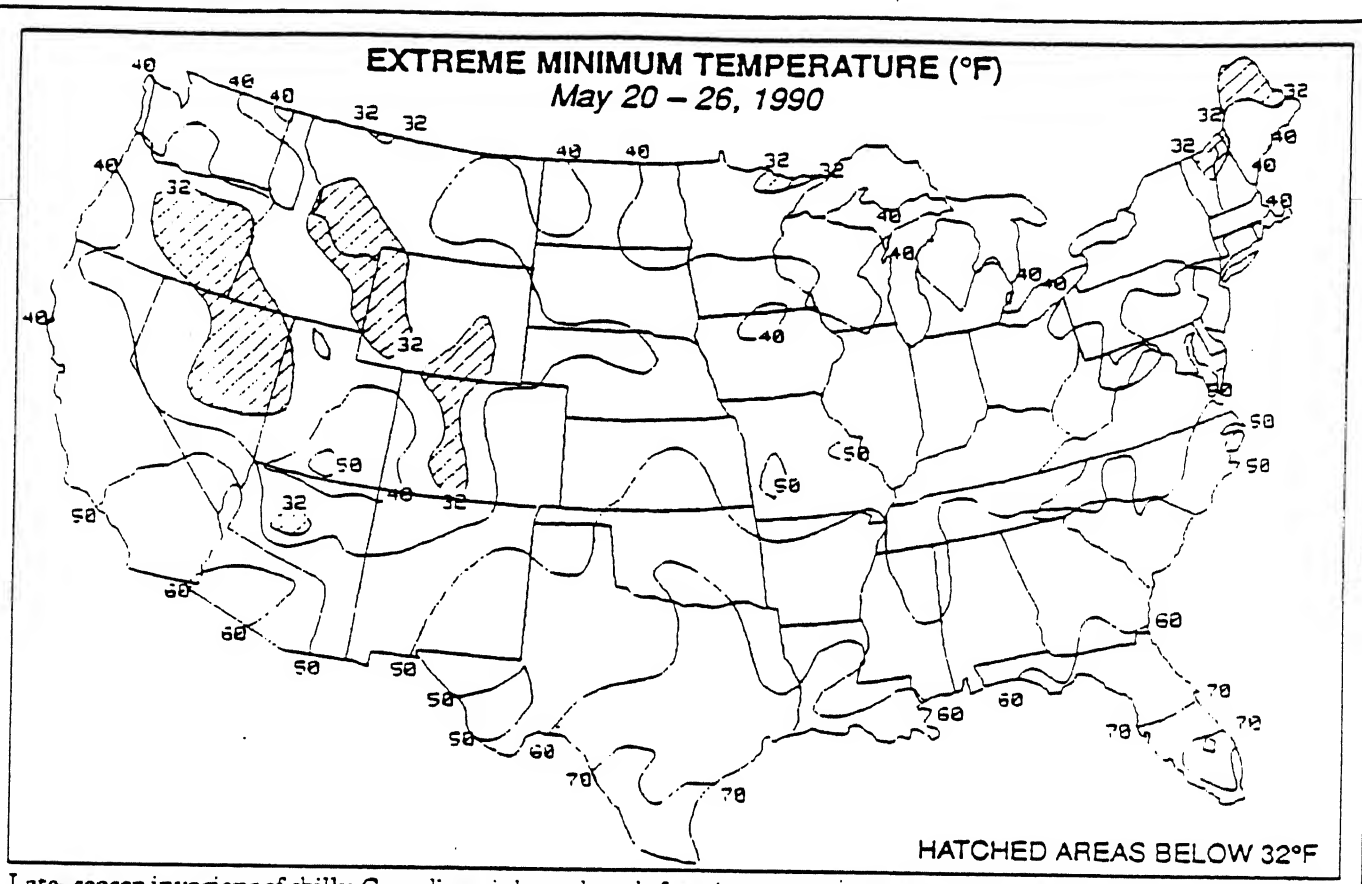
Strong southerly flow across the south–central and southwestern U.S. generated triple–digit readings in the Desert Southwest and portions of the southern Plains (top), but relatively low humidity throughout most of the country restricted uncomfortable apparent temperatures to the southern tier of states (bottom).



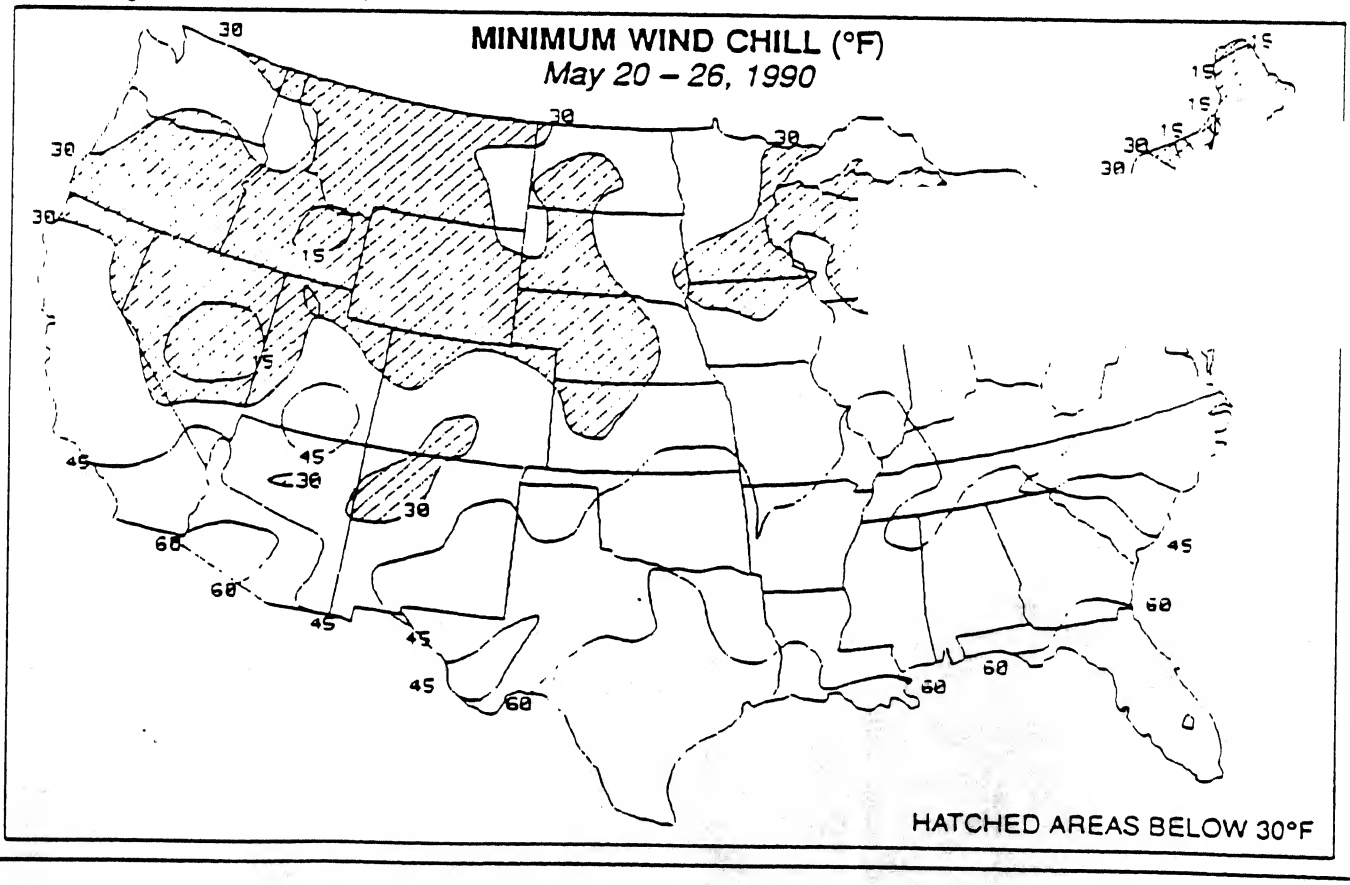


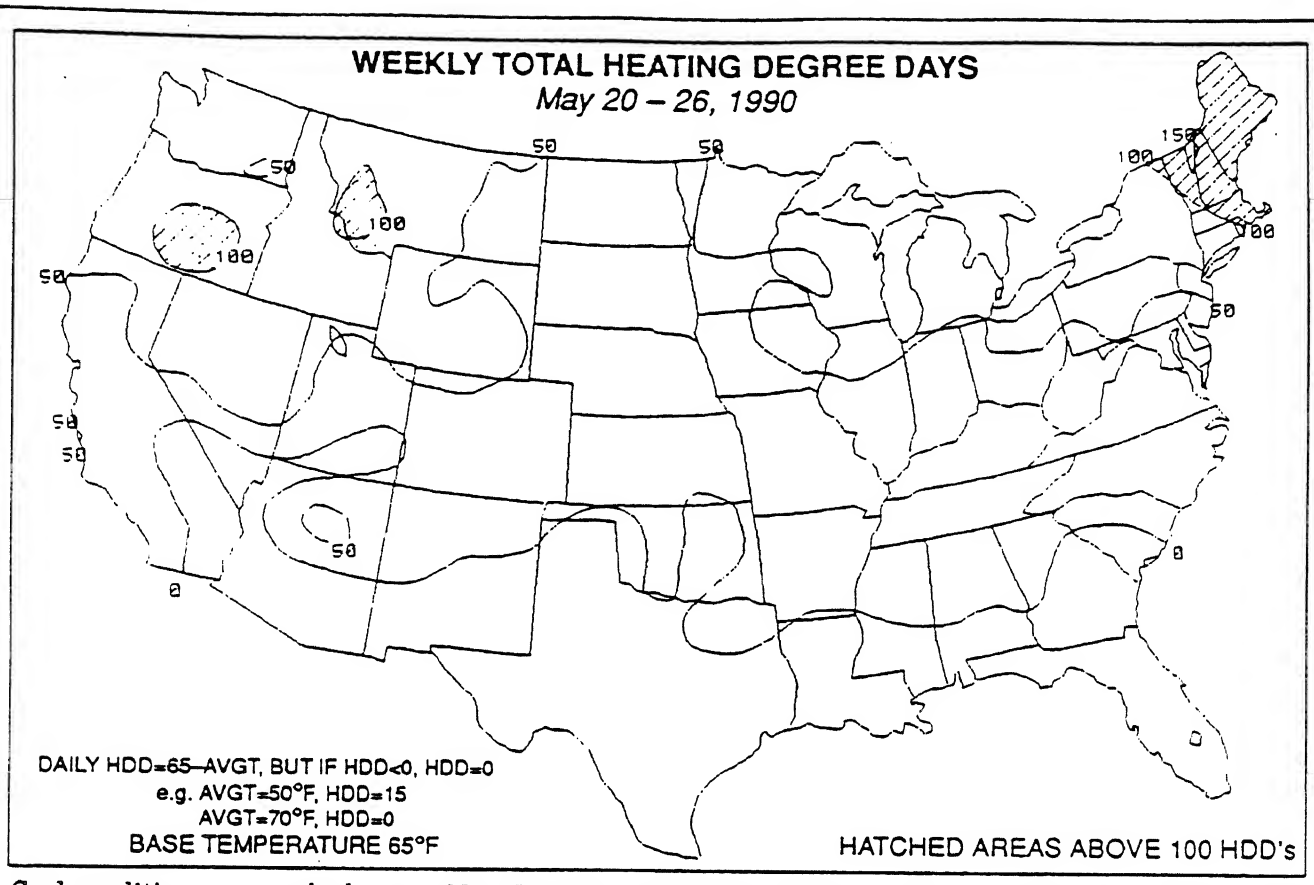
Summer–like weather continued to creep slowly northward last week, generating significant cooling usage across most of the southern quarter of the country (top). Meanwhile, hot weather in the southern Plains and Desert Southwest engendered above–normal cooling demand (bottom).



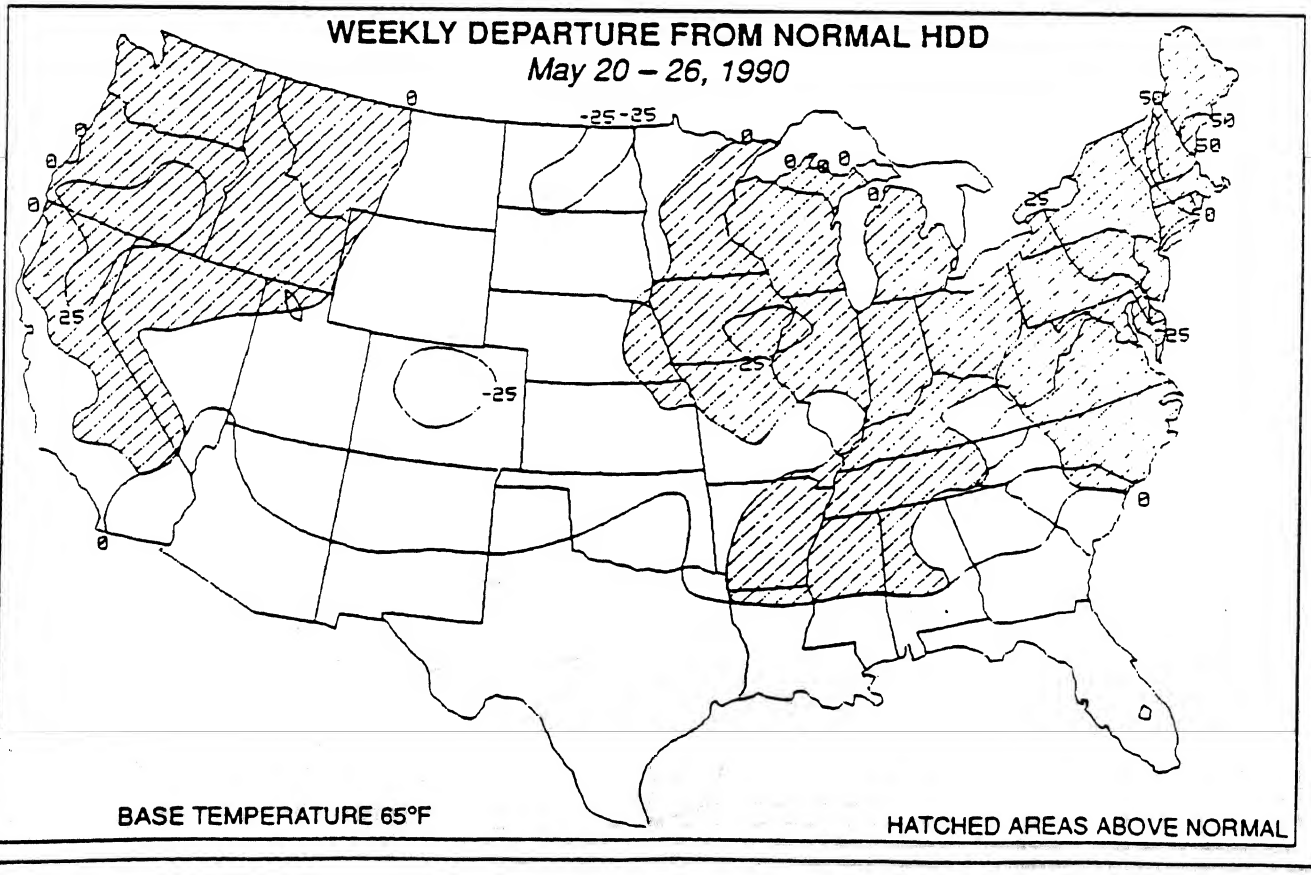


Late-season invasions of chilly, Canadian air brought sub-freezing temperatures to northwestern parts of the Great Basin, the higher elevations of the Cascades and Rockies, and northern New England (top). In addition, brisk winds combined with cool air across much of the Intermountain West, Rockies, High Plains, upper Midwest, and Northeast to produce biting wind chills (bottom).





Cool conditions entrenched across New England, the Great Lakes, and the northwestern quarter of the country promoted significant heating usage in those areas (top) while unseasonably warm weather reduced cooling demand in portions of the northern Great Plains and central Rockies (bottom).



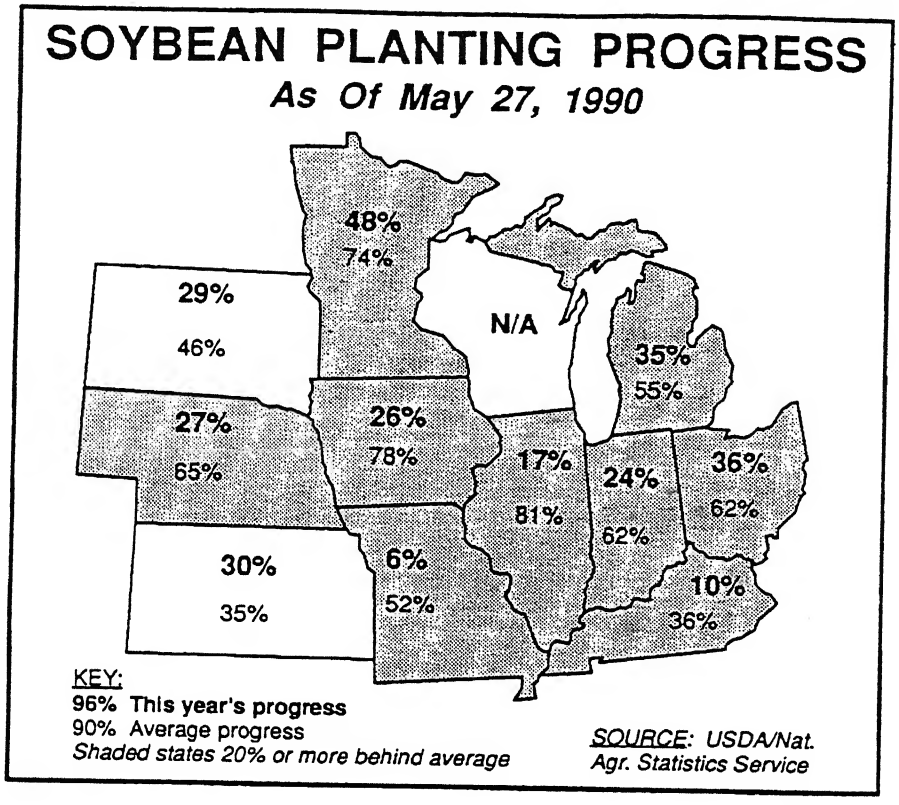


Figure 1. Soybean planting progress for major soybean producing states as of May 27, 1990. Source of information was obtained from the USDA/National Agricultural Statistics Service. Heavy Spring rains have saturated crop fields and caused numerous rivers to flood in the Corn and Soybean belts (Figures 2 and 3), greatly delaying both corn and soybean plantings. Missouri, Illinois, Indiana, and Kentucky were more than 20% behind average in planting BOTH their soybean and corn crops. Hardest hit areas were in southern Illinois and Indiana, central and southeastern Missouri, and northern and western Kentucky.

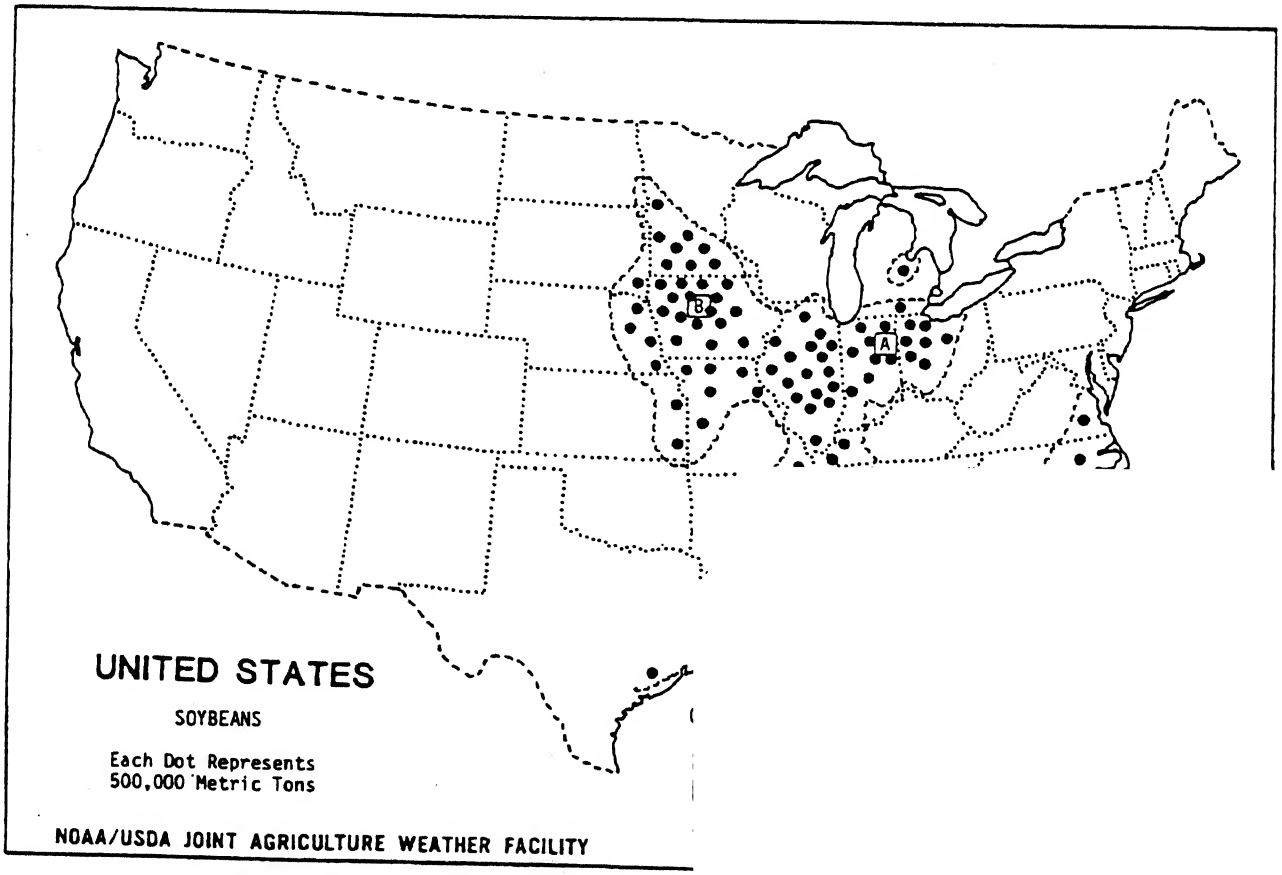


Figure 2. Major soybean producing areas in the United
Crop Areas and Climatic Profiles", Agriculture Handbook Nc
Outlook Board and the Joint Agricultural Weather Facility,

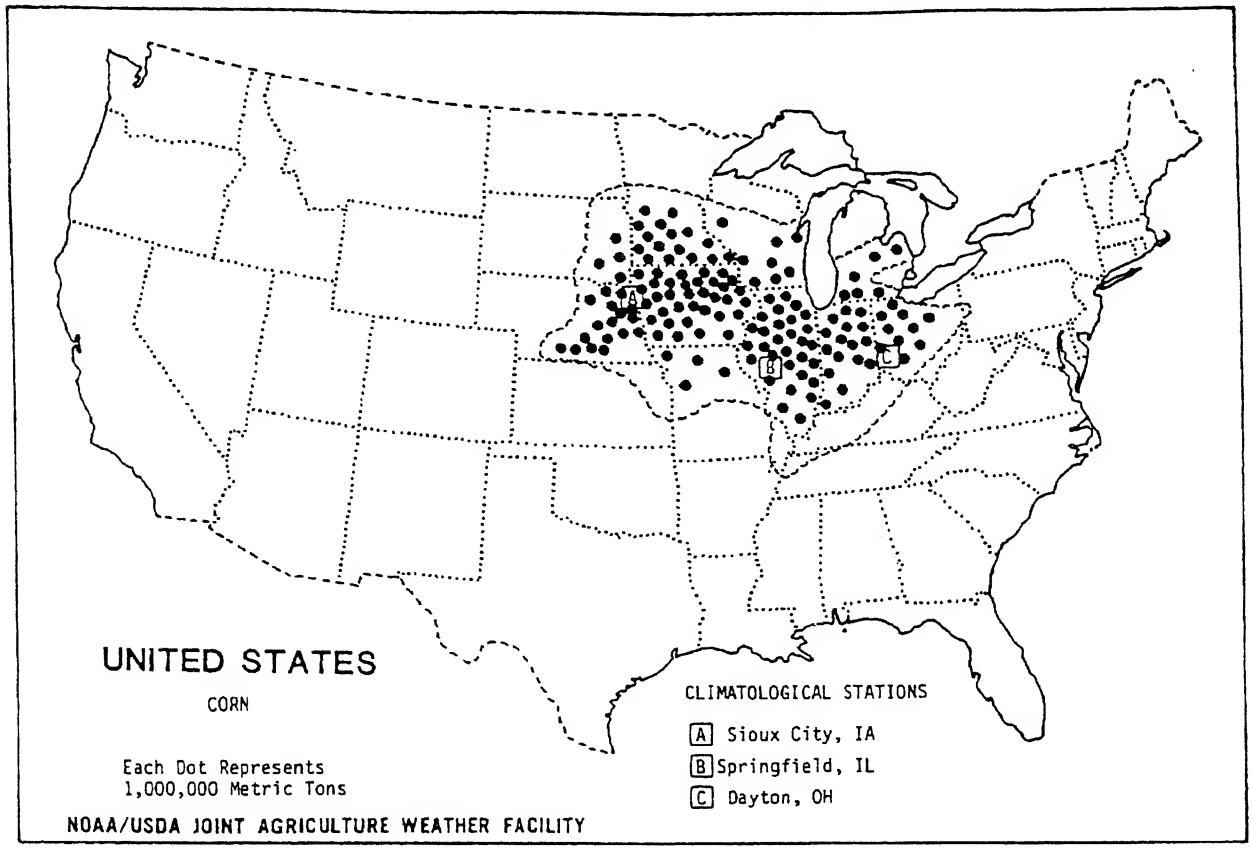


Figure 3. Major corn producing areas in the United States. Figure was obtained from "Major World Crop Areas and Climatic Profiles", Agriculture Handbook No. 664, produced by the USDA World Agricultural Outlook Board and the Joint Agricultural Weather Facility, Washington, D.C., September 1987, page 21.

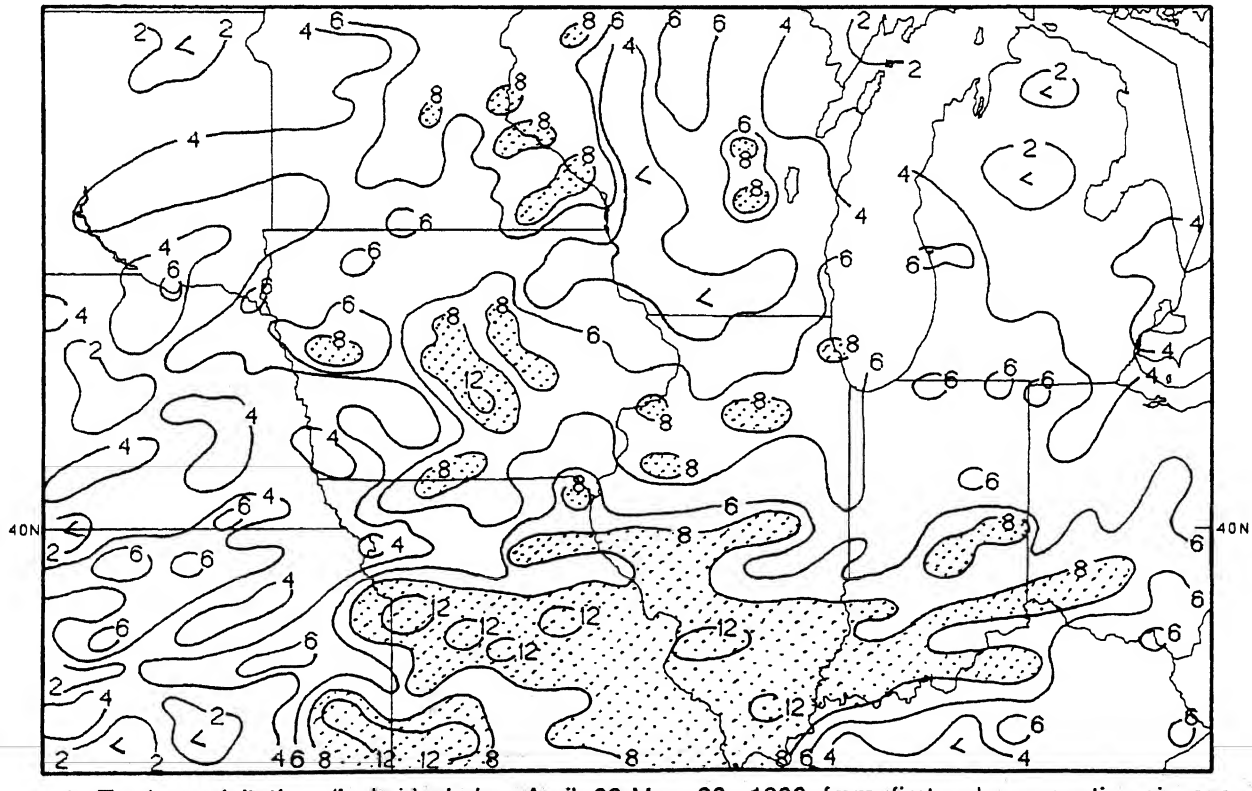


Figure 4. Total precipitation (inches) during April 22-May 26, 1990 from first-order synoptic, airways, and the River Forecast Centers stations. Isohyets are drawn for 2, 4, 6, 8, and 12 inches, and shaded areas are more than 8 inches. In addition to the copious rains experienced in the south-central Great Plains and Southeast, heavy Spring rains have saturated soils and caused rivers to overflow their banks. In the Midwest, excessively wet conditions have plagued central Iowa, much of Missouri, southern Illinois, Indiana, and Ohio, and northern and western Kentucky.

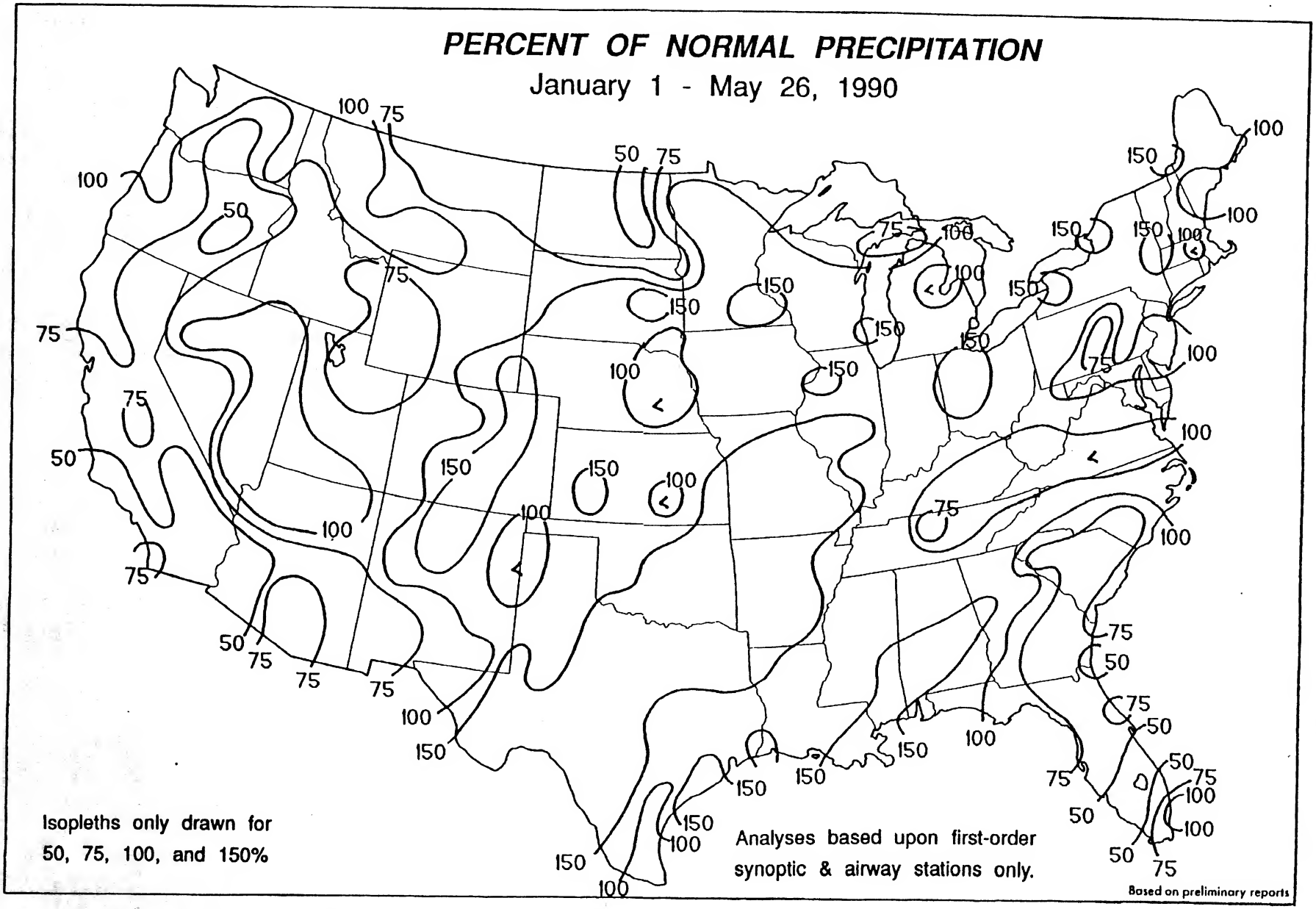


Figure 5. Percent of normal precipitation during January 1 - May 26, 1990 based only upon first-order synoptic and airways stations. Isopleths are drawn only for 50, 75, 100, and 150%. Nearly all of the eastern half of the nation, with the exception of the southern Atlantic Coast, parts of the mid-Atlantic, and the upper Great Lakes, has recorded near to above normal precipitation this year. More than one and a half times the normal precipitation has fallen on portions of the central U.S. where flooding has been severe this Spring. In sharp contrast, under 75% of the normal precipitation occurred in most of the Far West, especially southern California, where the past 4 rainy seasons (approximately Oct.-Apr.) have recorded subnormal precipitation. Much of the area is in long-term severe to extreme drought, and prospects for significant relief are not expected until later this year when the 1990-1991 rainy season commences.

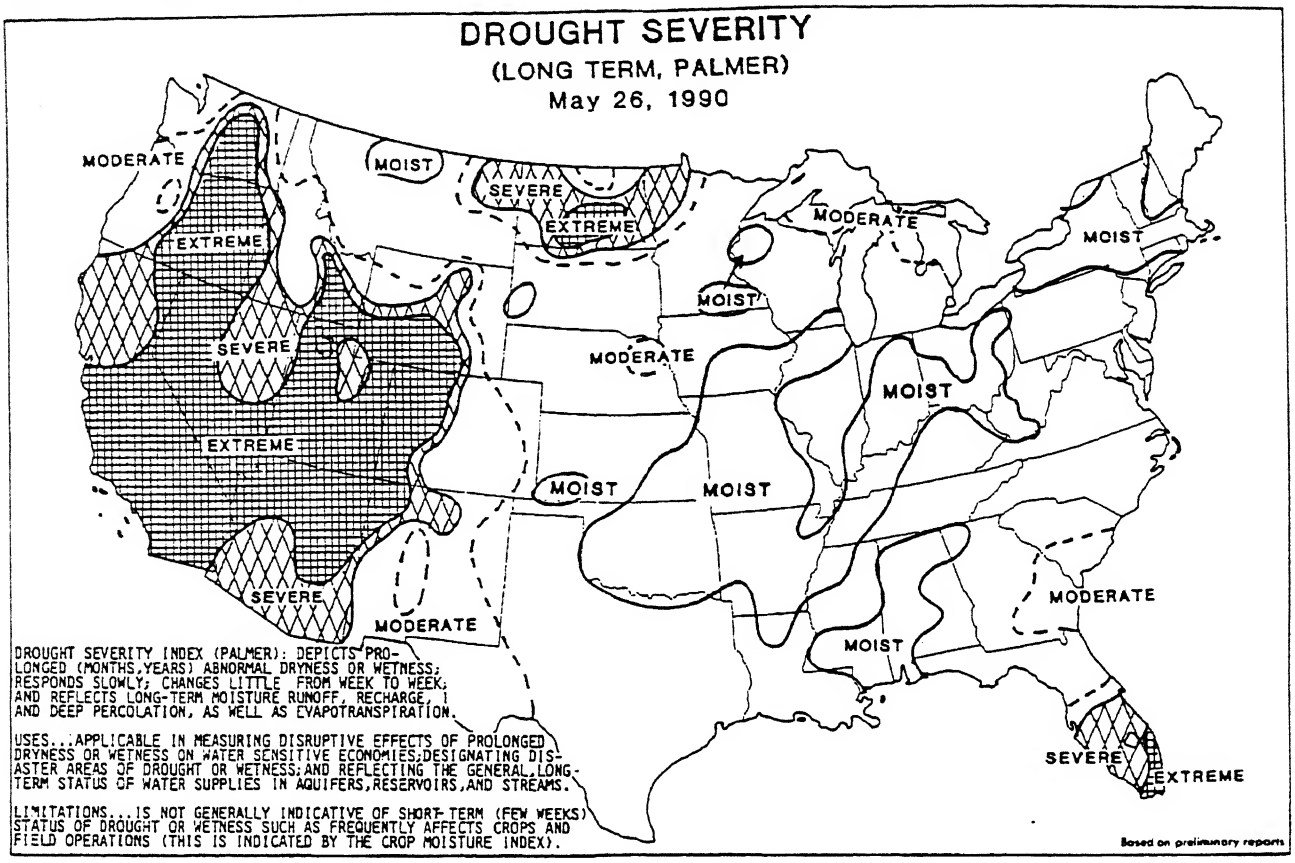


Figure 6. Palmer Drought Severity Index (long-term) for the week ending May 26, 1990. While much of the West is in severe or extreme drought, most of the central and northeastern U.S. is abnormally moist. For individual, non-analyzed PDSI climate division values, refer to Figure 9 on page 14.

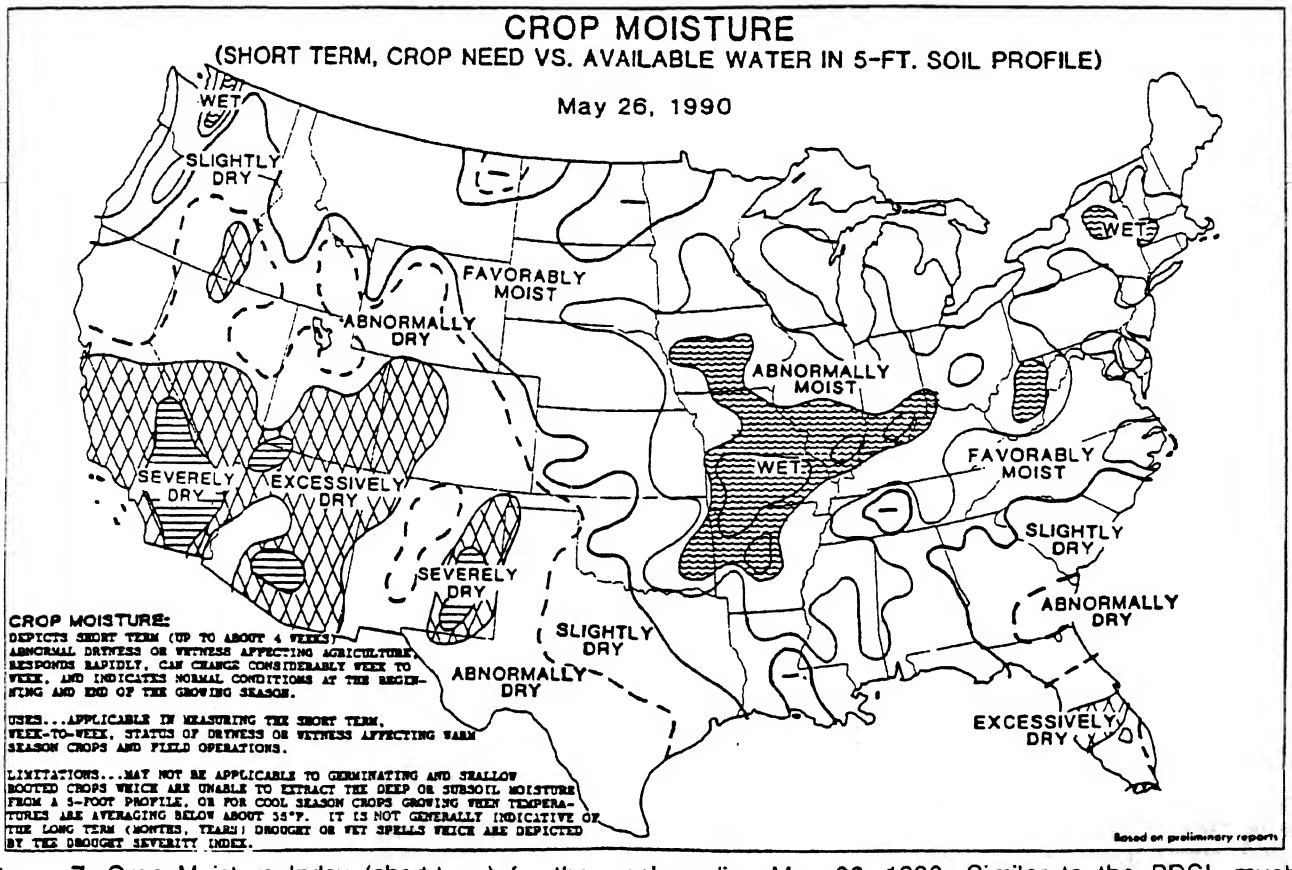


Figure 7. Crop Moisture Index (short-term) for the week ending May 26, 1990. Similar to the PDSI, much of the West has short-term dryness while the nation's midsection and the Northeast is extremely wet. For individual, non-analyzed CMI climate division values, refer to Figure 8 on page 13.

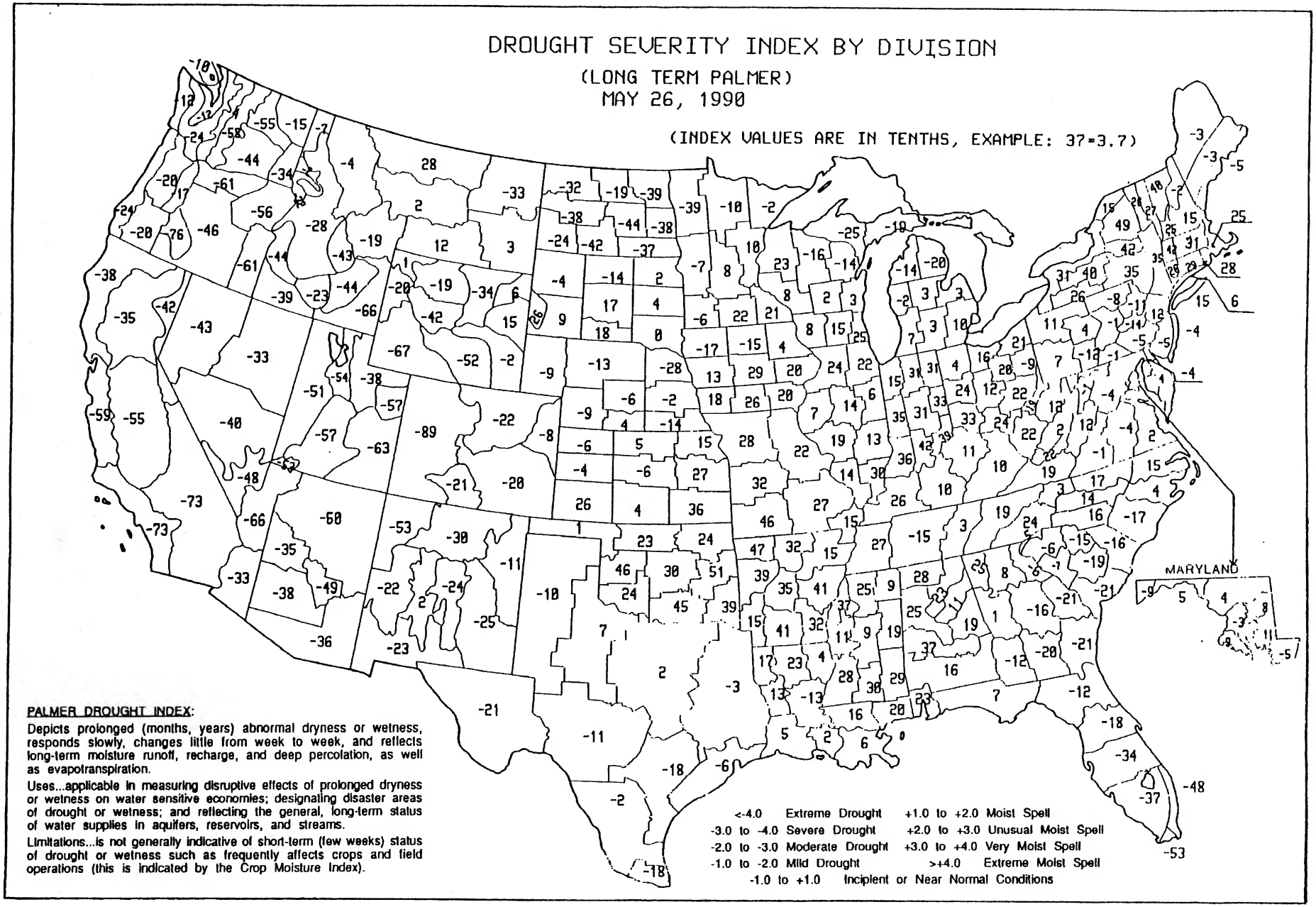


Figure 8. Palmer Drought Severity Index (long-term) for the week ending May 26, 1990. Index values are in tenths (e.g. 43=4.3), and the descriptive categories are listed above. For an analyzed version of this map, refer to Figure 6 on page 12.

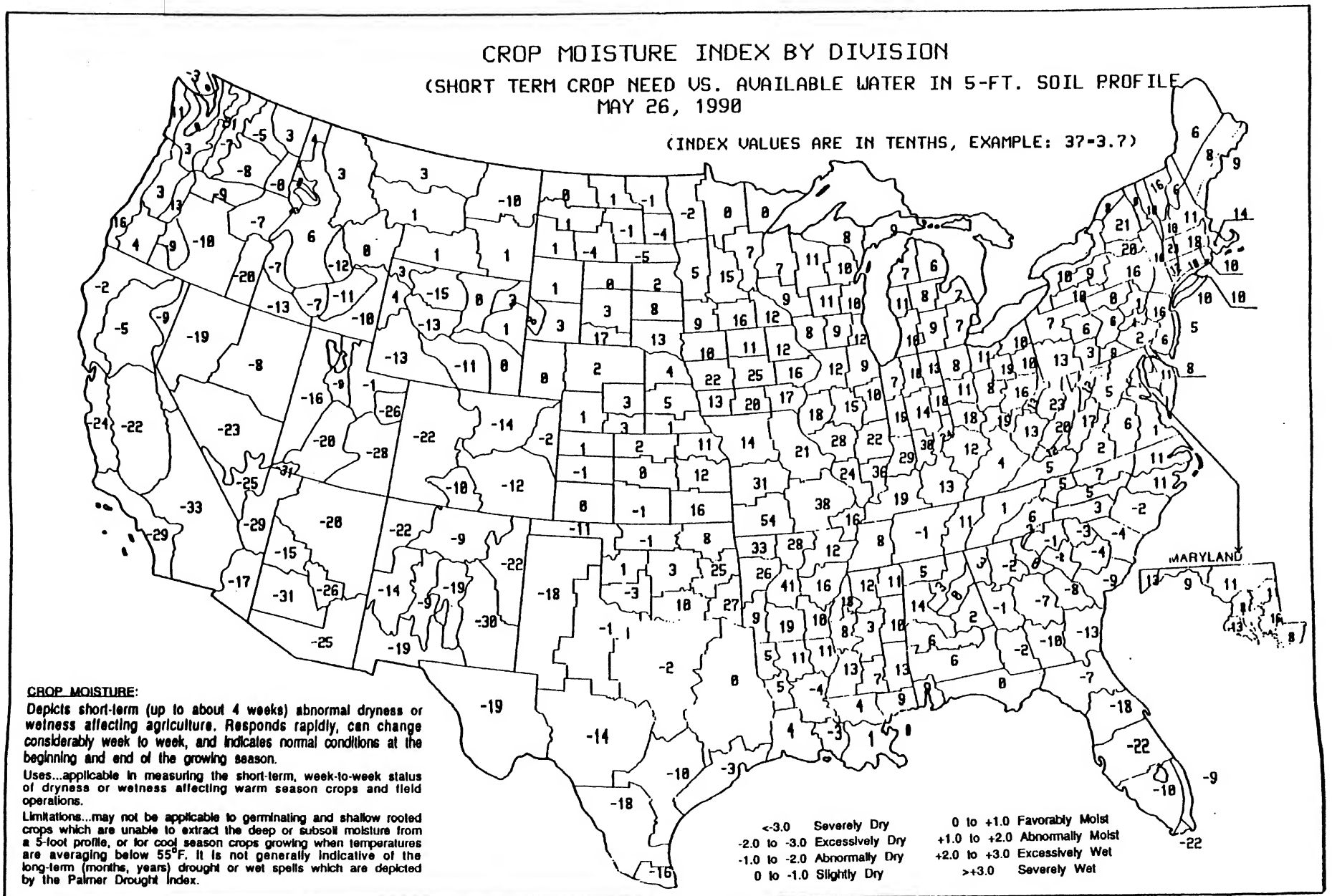
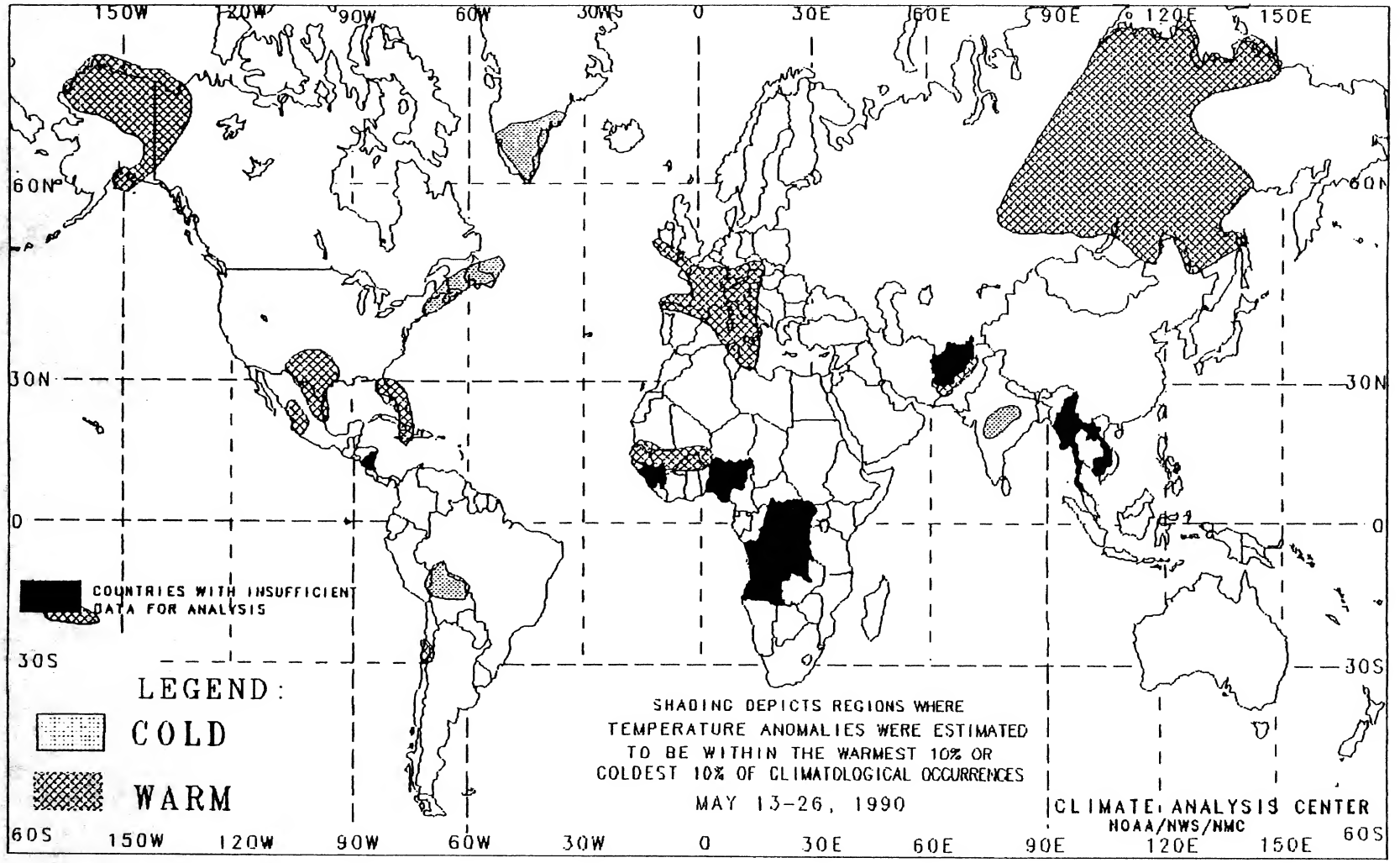


Figure 9. Crop Moisture Index (short-term) for the week ending May 26, 1990. Index values are in tenths (e.g. 26=2.6), and the descriptive categories are listed above. For an analyzed version of this map, refer to Figure 7 on page 12.

GLOBAL TEMPERATURE ANOMALIES

2 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty–four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

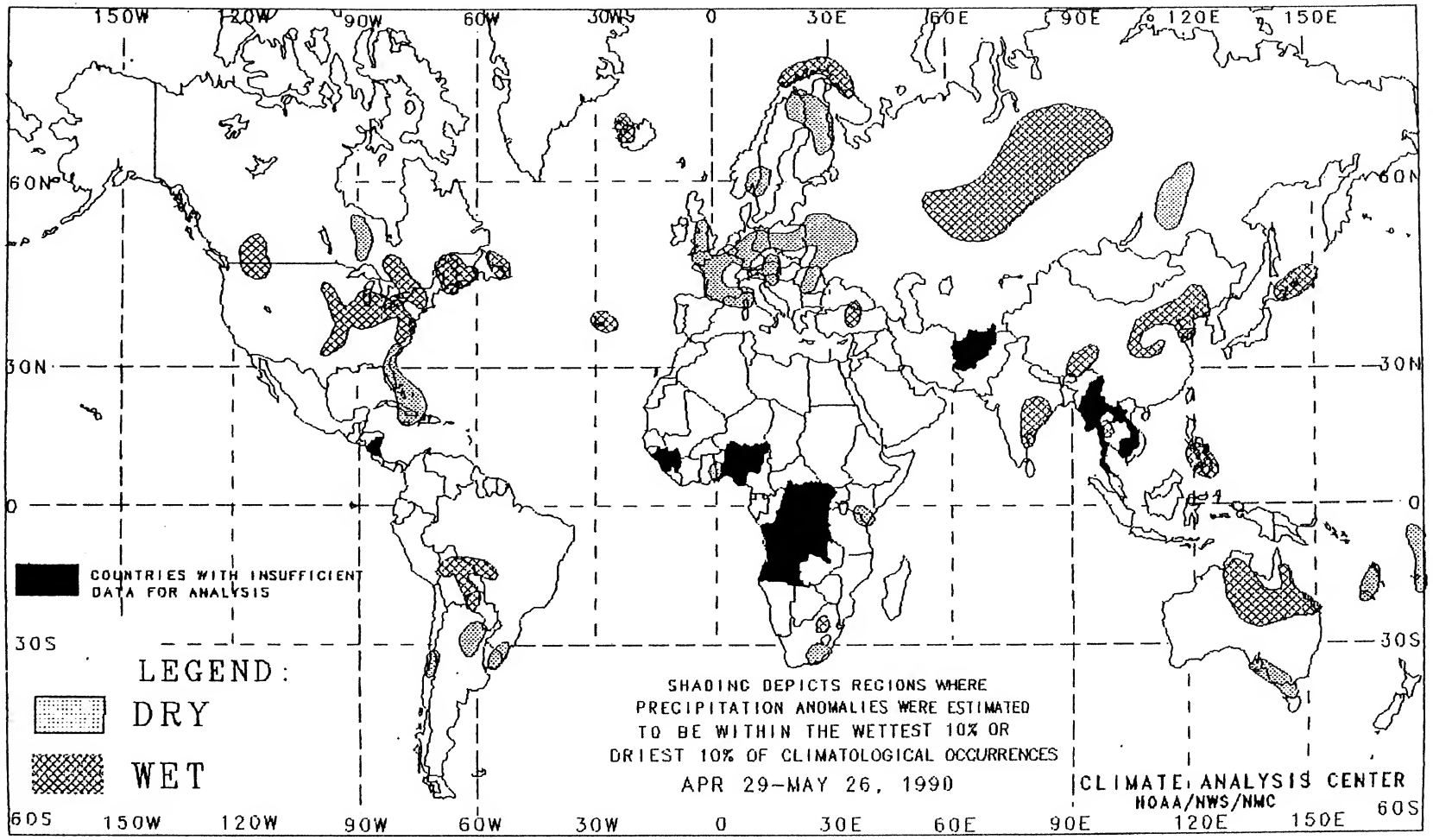
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL PRECIPITATION ANOMALIES

4 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.